- Line Integral:-Integral along the curve c is $\int_c \bar{F}.\overline{dr}$
- work done:-W=$\oint_c \bar{F}.\overline{dr}$
- Conservative Vector Field:- A vector field $\bar{F}$ is said to be conservative if and only if W=$\oint_c \bar{F}.\overline{dr}$
- If the vector field $\bar{F}$ is conservative field then it is always irrotational and we find scalar function Ø such that $\bar{F}$ =∇Ø, W=$\oint_A^B \bar{F}\,.\,\overline{dr}$=$Ø_B$-$Ø_A$
- Green's Lemma:-$\oint_c \bar{F}.\overline{dr}$=$\int_c udx + vdy = \iint_s (\frac{\partial v}{\partial x} - \frac{\partial u}{\partial y})dxdy$ (where c is traverse in anticlockwise direction).
- Stokes Theorem: - $\oint_c \bar{F}.\overline{dr}$=$\iint_s (\nabla \times \bar{F}).\overline{dr}$
- Gauss Divergence Theorem: - $\iint_s \bar{F}.\overline{ds}$=$\iiint_V (\nabla\,.\,\bar{F})$dv